

EB 80 SIGNAL MODULES - S

The EB 80 systems come with numerous input or output signal modules, which can be mounted on systems with fieldbus electrical connection or additional systems.

The signal modules can be added at any time. You only need to unscrew the aluminium plate to the left side of the "Electrical connection - E" module and install the "Signal Modules - S" (ready fitted with fixing tie rods) and retighten the end plate to the left.

Each signal module consists of two parts: the lower part, which contains transmission electronics of the controls, is unique and valid for all modules; the upper part, which is specific for each type.

This design highlights the modular features of the EB 80 system: the upper part of the "Signal Module - S" can be replaced either with a similar one by simply unscrewing the screws in the event of failure or one of another type. All this without having to remove anything from the system.



TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Power and current		See individual "Signal Modules - S"
Protection		See individual "Signal Modules - S"
Diagnostics		Local via LED light and software message
Maximum number of signal modules		Undervoltage, overvoltage, short-circuit and overload of individual connector and the entire module, 16 digital inputs modules 8 M8 + 16 digital outputs modules 8 M8 (or 8 modules with 16 Inputs + 8 modules with 16 Outputs) ** + 4 analogue inputs modules + 4 analogue outputs modules + 4 analogue input modules for temperature measurement
Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Versions		digital input, digital output, analogue input, analogue output
Degree of protection		IP65 (with connectors connected or plugged if not used) IP40 for 16-position I/O modules

* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.28

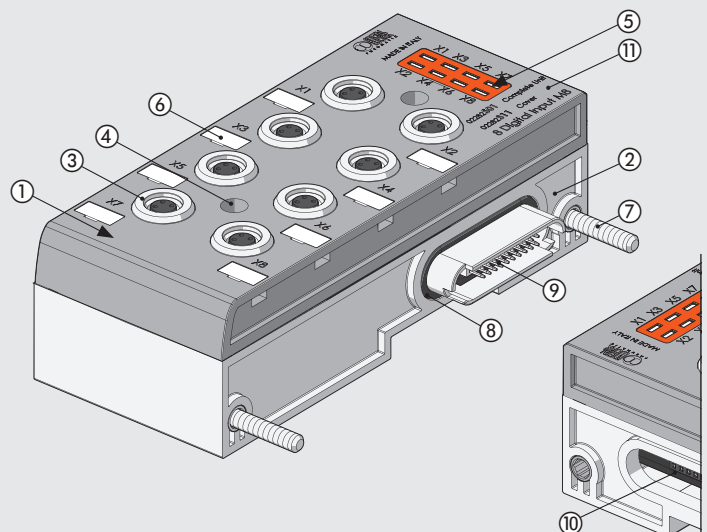
** For 16-IN/OUT modules, powered via the fieldbus. Check that the total current of simultaneously connected Inputs and Outputs is not greater than 3.5 A.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

N.B.: Refer to the following pages for specific technical data of each module.

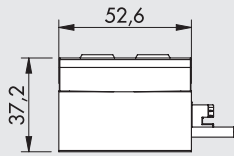
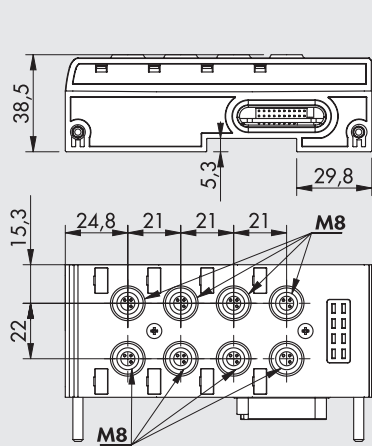
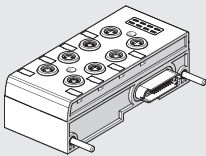
COMPONENTS

- ① UPPER PART BODY: technopolymer
- ② LOWER PART BODY: technopolymer
- ③ M8 CONNECTOR: signal connection
- ④ SCREW securing the upper part to the lower part
- ⑤ LED light
- ⑥ NAMEPLATE: removable
- ⑦ TIE ROD to secure modules: nickel-plated brass + stainless steel grub screw
- ⑧ GASKET: NBR
- ⑨ MALE CONNECTOR for other modules - S or fieldbus connection - E
- ⑩ FEMALE CONNECTOR for other modules - S or fieldbus connection - E
- ⑪ IDENTIFICATION of wording with laser



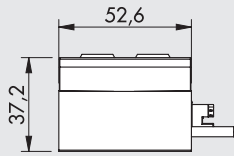
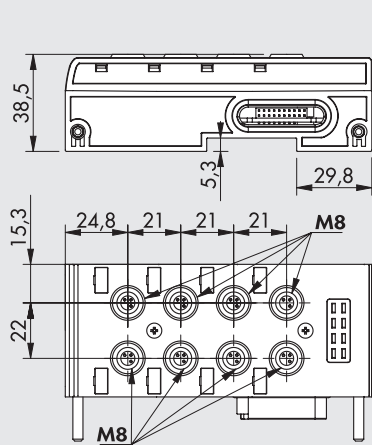
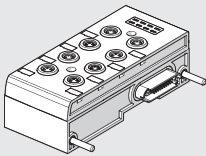
DIMENSIONS - ORDERING CODES

8 M8 DIGITAL INPUTS



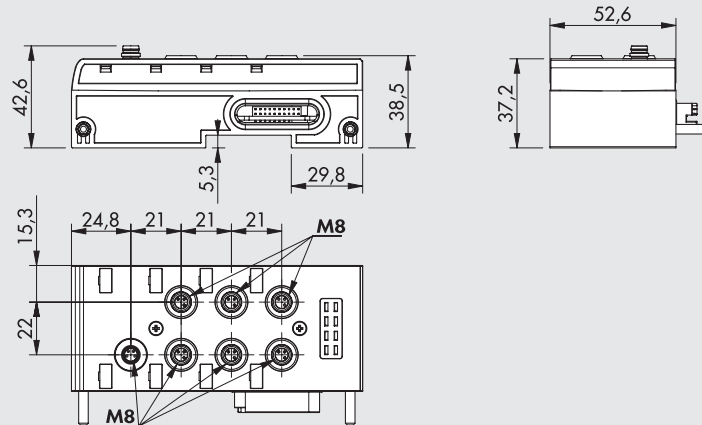
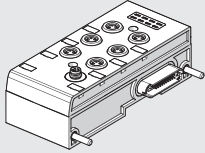
Code	Description	Weight [g]	TECHNICAL DATA	
02282S01	EB 80 module with 8 M8 digital inputs	250	Sensors supply voltage	Corresponding to the supply voltage
			Current for each connector	max 200 mA
			Current for each module	max 500 mA
			Input impedance	3.9 kΩ
			Type of input	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected inputs
			Connections	8 M8 3-pole female connectors
			Input active signals	One LED for each input

8 M8 DIGITAL OUTPUTS



Code	Description	Weight [g]	TECHNICAL DATA	
02282S02	EB 80 module with 8 M8 digital outputs	250	Output voltage	Corresponding to the supply voltage
			Current for each connector	max 500 mA
			Current for each module	max 3000 mA
			Type of output	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected outputs
			Connections	8 M8 3-pole female connectors
			Outputs active signals	One LED for each output

6 M8 DIGITAL OUTPUTS + ELECTRICAL POWER SUPPLY



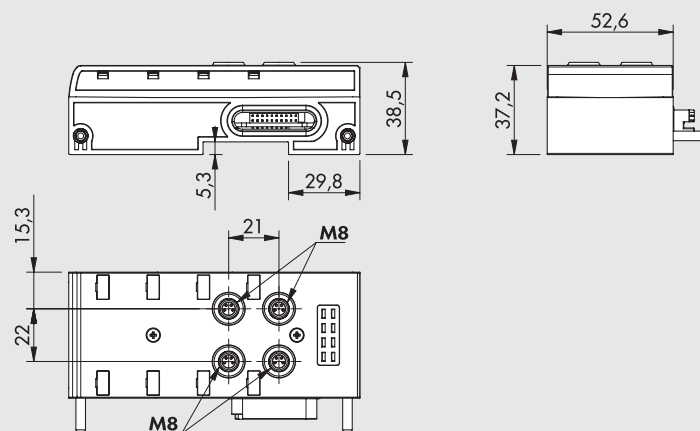
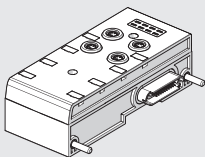
Code	Description	Weight [g]
02282S03	EB 80 module with 6 M8 digital outputs + electrical supply	240

TECHNICAL DATA	
Bus supply voltage range	VDC 12 -10% 24 +30%
Digital out supply voltage range	VDC 12 -10% 24 +30%
Minimum operating voltage	VDC 10.8 *
Maximum operating voltage	VDC 31.2
Maximum admissible voltage	VDC 32 ***
Output voltage	Corresponding to the supply voltage
Current for each connector	mA max 1000
Current for each module	mA max 4000
Type of output	Software-configurable PNP/NPN
Protection	Overload, short-circuit and polarity inversion protected outputs
Connections	6 M8 3-pole female connectors for Signals 1 M8 4-pole male connector for Supply
Output active signals	One LED for each output

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.28

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

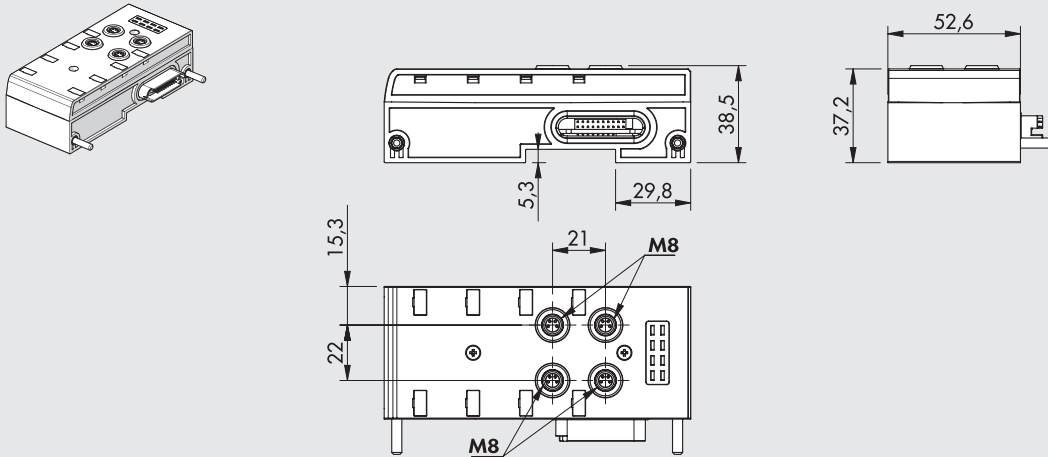
4 M8 ANALOGUE INPUTS



Code	Description	Weight [g]
02282S04	EB 80 module with 4 M8 analogue inputs	220

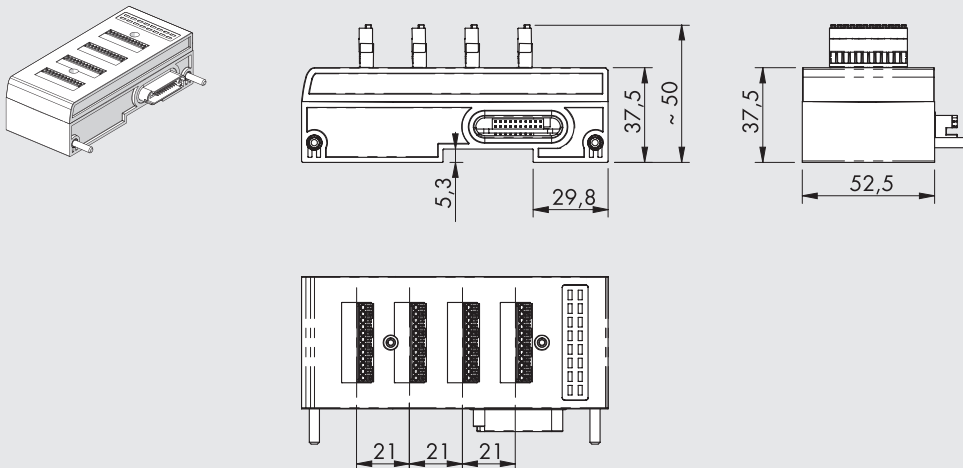
TECHNICAL DATA	
Sensors supply voltage	Corresponding to the supply voltage
Current for each connector	mA max 200
Current for each module	mA max 650
Type of input, software configurable	0/10VDC; 0/5VDC; +/-10VDC; +/-5VDC; 4/20 mA; 0/20 mA
Protection	Overload and short-circuit protected inputs
Connections	4 M8 4-pin female connectors
Local diagnostic signal via LED	Overload, short-circuit or type of input not complying with the configuration
Digital convert resolution	15 bit + prefix

4 M8 ANALOGUE OUTPUTS



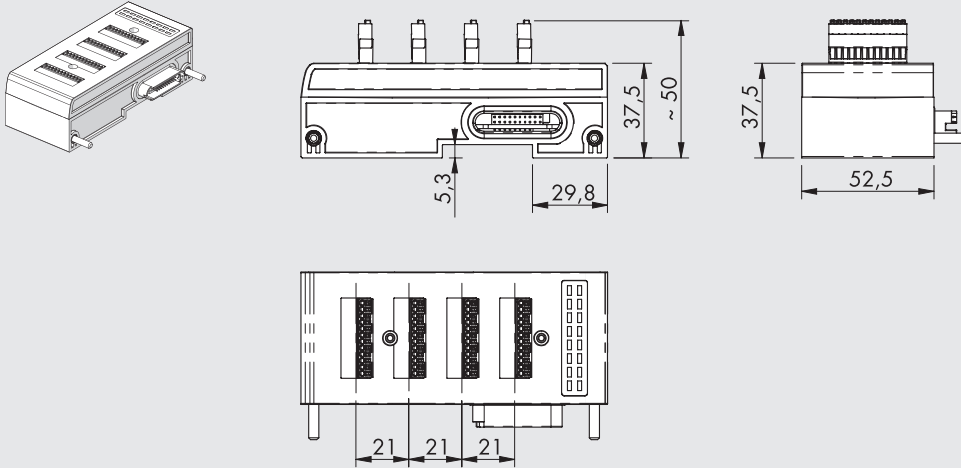
Code	Description	Weight [g]	TECHNICAL DATA	
02282S05	EB 80 module with 4 M8 analogue outputs	220	Devices supply voltage	Corresponding to the supply voltage
			Current for each connector	max 200
			Current for each module	max 650
			Type of output	0/10VDC; 0/5VDC; +/-10VDC; +/-5VDC; 4/20 mA; 0/20 mA
			Protection	Overload and short-circuit protected outputs
			Connections	4 M8 4-pole female connectors
			Local diagnostic signal via LED	Overload, short-circuit or type of connection not complying with the configuration
			Digital convert resolution	15 bit + prefix

16 DIGITAL TERMINAL BLOCK INPUTS



Code	Description	Weight [g]	TECHNICAL DATA	
02282S06	EB 80 module with 16 digital terminal block inputs	200	Sensors supply voltage	Corresponding to the supply voltage
			Current for each connector	max 200
			Current for each module	max 500
			Input impedance	3.9
			Type of input	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected inputs
			Connections	4 12-pin connectors with spring clamping
			Input active signals	One LED for each input
			Degree of protection	IP40

16 DIGITAL TERMINAL BLOCK OUTPUTS

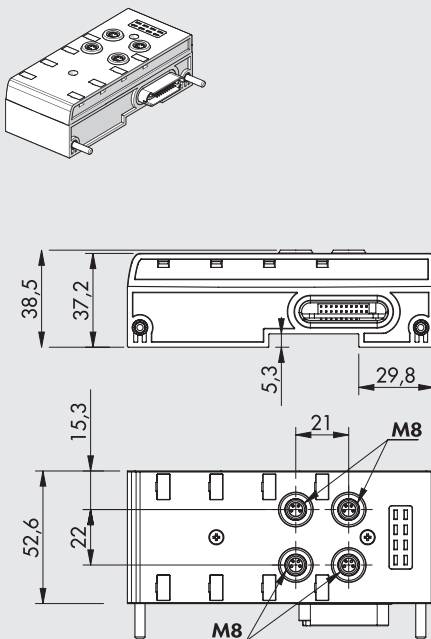


Code	Description	Weight [g]
02282S07	EB 80 module with 16 digital terminal block outputs	200

TECHNICAL DATA	
Output voltage	Corresponding to the supply voltage
Current for each connector	mA max 500
Current for each module	mA max 3000 *
Type of output	Software-configurable PNP/NPN
Protection	Overload and short-circuit protected outputs
Connections	4 12-pin connectors with spring clamping
Outputs active signals	One LED for each Output
Degree of protection	IP40

* **IMPORTANT:** the module is powered via the fieldbus. Check that the total current of connected outputs is not greater than 3.5A.

4 M8 ANALOGUE INPUTS FOR TEMPERATURE MEASUREMENT



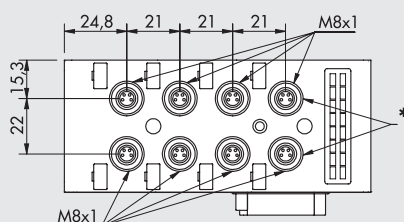
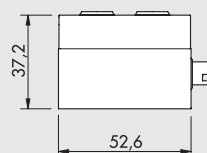
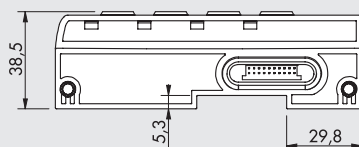
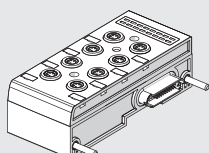
Code	Description	Weight [g]
02282S08	EB 80 module with 4 M8 analogue inputs for temperature measurement	220

TECHNICAL DATA	
Sensors supply voltage	Corresponding to the supply voltage
Maximum input voltage	VDC 30
Sensor type (RTD)	Pt100, Pt200, Pt500, Pt1000 (TK = 0.00385 and TK = 0.00391) Ni100, Ni120, Ni500, Ni1000 (TK = 0.00618)
Connections type (RTD)	2, 3 or 4-wire
Type of thermocouple (TC)	J, E, T, K, N, S, B, R
Cold junction compensation for thermocouples	internal
external (recommended in case of sudden changes in the ambient temperature)	With internal electronic sensor included PT1000 sensor for connection with the M8 thermocouple connector
Temperature range	°C °F - 200 to + 800 - 328 to + 1472
Digital convert resolution	15 bit + prefix
Max error compared to ambient temperature	±0.5% (TC) ±0.06% (RTD)
Max. basic error (ambient T 25°C)	°C °C ±0.4% (TC) ±0.6 (with 4-wire RTD with 0.1 resolution) ±0.2 (with 4-wire RTD with 0.01 resolution)
Repeatability (ambient T 25°C)	±0.03%
Address employment	2 bytes for each input - 8 bytes per module
Cycle time (module)	ms 240
Software linearization	for RTD for TC Piecewise linear approximation NIST (National Institute of Standards and Technology) Linearization based on ITS-90 scale (International Temperature Scale of 1990) for the thermocouple linearization
Maximum length of shielded cable for the connection	m < 30
Diagnostics	One LED for each input and reporting to the Master

16 M8 CONFIGURABLE DIGITAL INPUTS/OUTPUTS

This is an innovative module with 8 connectors and 16 digital signals, each configurable as a digital input or digital output.

The S21 module can be configured via software by connecting the island's fieldbus module to a PLC. The signals of the first two connectors can also be used as inputs for reading direct current (VDC) motor encoders. Since each 4-pin connector allows the management of two signals (a pair of pins for each signal), dedicated connectors are also provided that allow the separation of the signals.



* Connectors usable also for reading direct current motor encoders

Code	Description	Weight [g]	TECHNICAL DATA	
02282S21	EB 80 module with 16 M8 configurable digital inputs/outputs	230	Supply voltage	Corresponding to power voltage
			Current for each connector	mA max 1000
			Current for each module	mA max 3000
			Current for each output	mA max 500
			Type of output	PNP
			Input impedance	kΩ 3.9
			Type of input	PNP
			Protection	Overload and short-circuit protected inputs /outputs
			Connections	8 M8 4-pole female connectors
			Input active signals	One LED for each input
			Output active signals	One LED for each output
			Default configuration	Port X1...X8 Digital inputs Port X9...X16 Digital outputs
			Encoder Configuration	
			Type of input	PNP
			Input active signals	V >12
			Input not active signals	V <12
			Maximum Frequency	Hz 300
			Value format	32 bit (DWORD)
			Maximum count	4.294.967.295

KEY TO CODES

02282	S	01
FAMILY	SUBSYSTEM	TYPE
02282 EB 80	S Modules	01 8 M8 digital inputs 02 8 M8 digital outputs 03 6 M8 digital outputs + electrical supply 04 4 M8 analogue inputs 05 4 M8 analogue outputs 06 16 digital terminal block inputs 07 16 digital terminal block outputs 08 4 M8 analogue inputs for temperature measurement 21 16 M8 configurable digital inputs/outputs

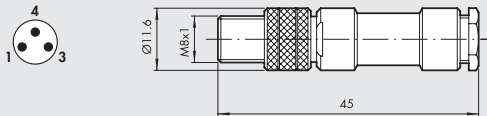
ACCESSORIES

M8 PLUG



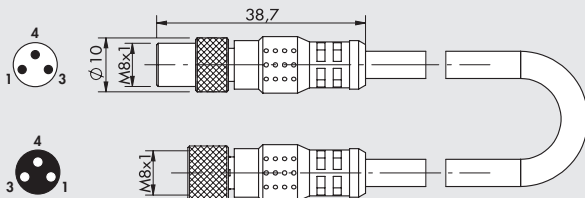
Code	Description
0240009039	Plug for M8 connector

M8 CONNECTOR FOR DIGITAL INPUTS / OUTPUTS



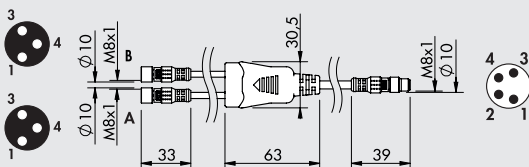
Code	Description
0240009010	M8 3-pin straight connector

M8 CONNECTOR WITH CABLE FOR DIGITAL INPUTS /OUTPUTS



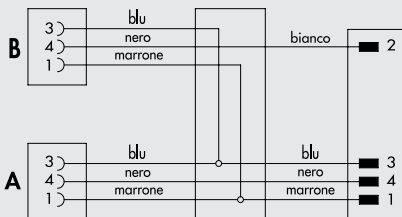
Code	Description
0240009009	M8-M8 3-pin straight connector with cable L = 3 m

Y-CONNECTOR WITH CABLE FOR DIGITAL INPUT/OUTPUT

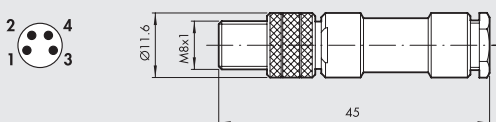


Code	Description
0240009048	Y-connector M8 4-pin M / double M8 3-pin F with cable L = 0.7 m

Note: Can only be used with S21 modules



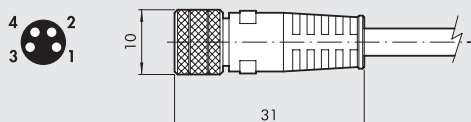
M8 MALE CONNECTOR FOR ANALOGUE INPUTS/OUTPUTS



Code	Description
0240010300	M8 4-pin male connector

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black

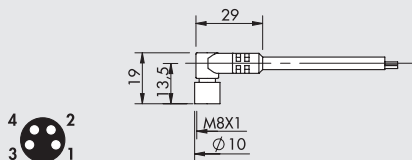


Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

* Very flexible cables, class 6 according to IEC 60228

90° M8 CONNECTORS WITH SHIELDED CABLE

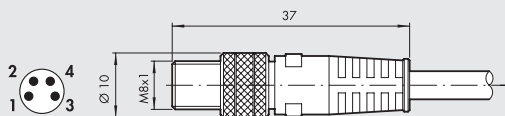
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009102	M8 4-pin female, 90° connector with shielded cable L = 2 m
0240009103	M8 4-pin female, 90° connector with shielded cable L = 5 m

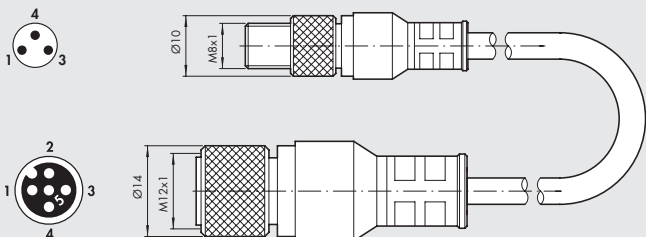
M8 4-POLE MALE CONNECTOR

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240010105	M8 4-pin connector shielded cable L = 5 m

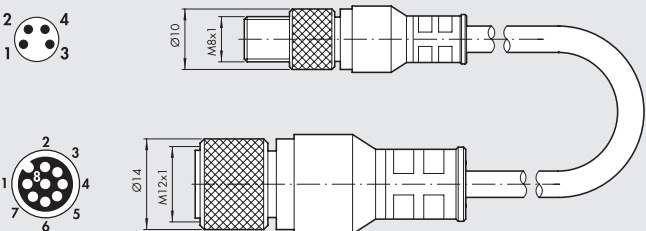
M8 3-POLE MALE – M12 5-POLE FEMALE CONNECTOR WITH CABLE FOR DIGITAL INPUTS/OUTPUTS



Code	Description
0240009045	M8 3-pole male straight - M12 5-pole female connector with cable L= 0.2 m

M8	M12
pin 1	pin 1
pin 4	pin 4
pin 3	pin 3

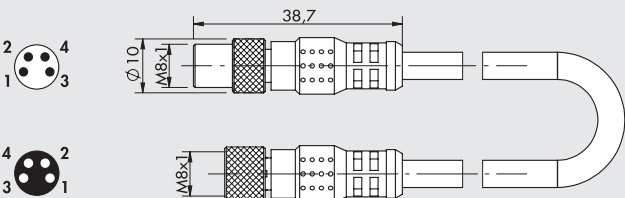
M8 4-POLE MALE – M12 8-POLE FEMALE CONNECTOR WITH CABLE FOR REGTRONIC CONNECTION



Code	Description
0240009046	M8 4-pole male straight - M12 8-pole female connector with cable L= 1 m

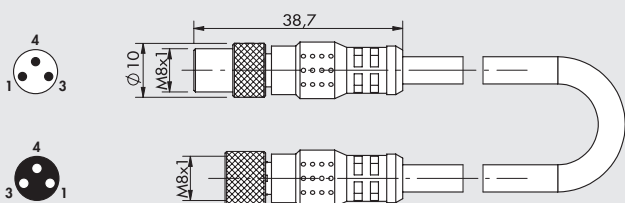
M8	M12
pin 1	pin 8
pin 2	pin 3
pin 3	pin 7
pin 4	disconnect

M8 CONNECTOR WITH SHIELDED CABLE FOR ANALOGUE INPUTS/OUTPUTS



Code	Description
0240005005	M8-M, M8-F 4-pole straight connector with shielded cable L = 1 m
0240005006	M8-M, M8-F 4-pole straight connector with shielded cable L = 3 m
0240005003	M8-M, M8-F 4-pole straight connector with shielded cable L = 5 m
0240005008	M8-M, M8-F 4-pole straight connector with shielded cable L = 10 m

M8 ADAPTER CABLE FOR CONNECTING THE PRESSURE SWITCH TO THE DIGITAL INPUTS MODULE

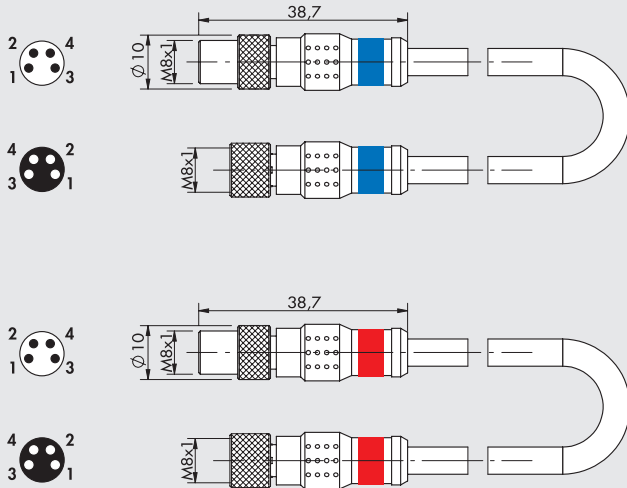


Code	Description
0240010501	M8-M, M8-F 3-pole adapter with cable L = 0.3 m

Note: Can be used for connecting 1/8-1/4, Syntesi®, Skillair®, PRS L pressure switches to the module of digital INPUT S01 of the EB 80 valves. Contact type NO (Normally-Open)

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 3	pin 4	Signal NO
pin 4	pin 3	Disconnect

M8 SHIELDED ADAPTER CABLE FOR CONNECTING THE LTS-LTL POSITION TRANSDUCERS TO THE ANALOGUE INPUTS MODULE



Code Description

0240010601 M8-M, M8-F 4-pole adapter with shielded cable L = 0.3 m (**blue collar**)

Note: Can be used for connecting the **4/20 mA** analog output of the LTL-LTS position sensors to the module of analog INPUT **S04** of the EB 80 valves.

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 2	pin 2	Signal 4/20 mA
pin 3	pin 3	Power supply -
pin 4	disconnect	

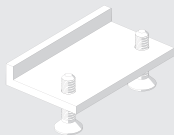
Code Description

0240010701 M8-M, M8-F 4-pole adapter with shielded cable L = 0.3 m (**red collar**)

Note: Can be used for connecting the **0/10 VDC** analog output of the LTL-LTS position sensors to the module of analog INPUT **S04** of the EB 80 valves.

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 4	pin 2	Signal 0/10 V
pin 3	pin 3	Power supply -
pin 2	disconnect	

ADDITIONAL FIXING BRACKET TO OMEGA BAR



Code	Description	Weight [g]
02282R4001	Additional fixing bar accessory to EB 80 Omega bar	5

Individually packed

N.B.: to be used to improve the fixing to Omega bars of islands with more than 10 modules. The bracket must be positioned every 5-6 modules.

SPARE PARTS

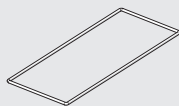
EB 80 BUS/SIGNAL INTERFACE OR SEAL



Code	Description
02282R1005	EB 80 BUS/Signal interface OR seal

Comes in 10-pc. packs

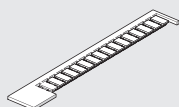
EB 80 GASKET BETWEEN BASE AND BUS/SIGNAL COVER



Code	Description
02282R1004	Kit of gaskets between base and BUS/Signal cover

Comes in 10-pc. packs

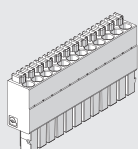
IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 16-pc. packs

CONNECTOR 12 POSITIONS



Code	Description
02282R5010	Connector 12 positions for modules S06 and S07

Comes in 4-pc. packs